

**kuraray**
**mowital™**  
world of PVB resin

# Mowital SB

## Technical data sheet

### Characteristics

Polyvinyl butyral (PVB) grades with different molecular weights, and varying degrees of acetalization.

### Form supplied

Fine-grained, free-flowing white powder

### Recommended Uses

Binder for coatings (adhesion promotion/ corrosion protection primers, shop primers, wash primers, stoving enamels, varnishes and lacquers for different substrates). Binder for printing inks. Co-binder for powder coatings. Temporary binder for ceramics. Binder for textile printing and non-woven. Wetting agent for grindings, esp. of organic pigments. Adhesives, pressure-sensitive adhesives and hotmelts.

### Storage

In its original packaging Mowital may be stored under dry and cool conditions for at least 12 months.

### Waste disposal

In accordance with current regulations and/or after consultation with site operator and/or with the responsible authorities Mowital may be taken to waste disposal sites or incineration plants.

## Specification Data

The data are determined by our quality control for each lot prior to release.

| grade            | Non-volatile content<br>(DIN 53216) | Content of polyvinyl alcohol <sup>1)</sup> | Content of polyvinyl acetate <sup>2)</sup> | Content of chloride ions Cl <sup>-</sup><br>(similar to ISO 6227) | Dynamic viscosity <sup>3)</sup><br>10 % solution in Ethanol <sup>4)</sup> |
|------------------|-------------------------------------|--------------------------------------------|--------------------------------------------|-------------------------------------------------------------------|---------------------------------------------------------------------------|
|                  | wt-%                                | wt-%                                       | wt-%                                       | ppm                                                               | mPa · s                                                                   |
| Mowital SB 60 HH | ≥ 97.5                              | 12-14                                      | 1-4                                        | < 100                                                             | 100-140                                                                   |
| Mowital SB 70 HH | ≥ 97.5                              | 12-14                                      | 1-4                                        | < 100                                                             | 280-330                                                                   |

<sup>1)</sup> Hydroxyl groups in terms of polyvinyl alcohol

<sup>2)</sup> Acetyl groups in terms of polyvinyl acetate

<sup>3)</sup> according to DIN 53015, at 20 °C

<sup>4)</sup> containing 5 % water

## Additional Data

| Grade            | Glass transition temperature<br>(DSC, ISO 11357-1) | Water up-take after 24 h<br>water immersion <sup>1)</sup><br>at 20 °C | Bulk density<br>(DIN EN 543, Dec. 1991) |
|------------------|----------------------------------------------------|-----------------------------------------------------------------------|-----------------------------------------|
|                  | °C                                                 | wt-%                                                                  | g / l                                   |
| Mowital SB 60 HH | 65                                                 | 3-5                                                                   | 210                                     |
| Mowital SB 70 HH | 68                                                 | 3-5                                                                   | 210                                     |

These data are used solely to describe the product. They are not subject to constant monitoring or part of the specification.

<sup>1)</sup> dry film thickness of test specimen: 0.1 m

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## Nomenclature

Our Mowital SB grades are named using a self explaining nomenclature. The trade-name Mowital is followed by the capitals S and B. S indicates a narrower specification compared to the corresponding Mowital B grades and B states the used aldehyde (butyraldehyde). The numbers refer to the degree of polymerization, the higher the number the higher the degree of polymerization (viscosity). The suffix HH indicate the degree of acetalization.

## Properties and uses

The Mowital grades are thermoplastic polyvinyl butyral resins which are supplied as fine-grained, free-flowing powders.

The properties of the various grades are mainly determined by their molecular weights and their degree of acetalization. Mowital grades are soluble in a broad variety of organic solvents. They show good compatibility with plasticizers and other resins. Mowital grades are able to cross-link with other resins such as phenolic, epoxide and melamine resins. The network density may be adjusted depending on the degree of residual OH groups which is determined by the degree of acetalization.

Mowital films are resistant to light and heat-sealable at temperatures above 120 °C. Toughness and elasticity are influenced by their molecular weight. Properties like water resistance and solubility in non-polar solvents mainly depend on their degree of acetalization. So the highly acetalized Mowital HH grades show the highest water resistance and best solubility in non-polar solvents such as toluene.

## Application

Due to their narrow specification the Mowital SB grades are particular suitable for all applications where an extremely low tolerance for viscosity is essential (e.g. casting process) or where a very low ion content is required.

## Processing

Mowital can be processed thermoplastically or in solution of organic solvents.

## Preparation of Mowital solutions

Mowital is soluble in a wide range of organic solvents and mixtures thereof. It can be dissolved in single solvents but to obtain low solution viscosities it is recommended to dissolve Mowital in solvent mixtures (e.g. 1:1 mixture of ethanol and toluene).

Mowital is not soluble in water. However, a water content of up to 10% in the solvent mixture is possible and can be used to influence solution viscosity. Increase or decrease of viscosity depends on the type of solvents (e.g. increase in ethanolic solution) and must be tested in advance. To dissolve Mowital, stir the solvent or solvent mixture and add Mowital in portions at ambient temperature. The stirrer speed during addition of Mowital should be low to medium to ensure good dispersion of Mowital powder in the solvent and to avoid dusting. After Mowital is wetted by the solvent the stirring speed can be increased. Sometimes heat may be necessary for dissolving Mowital. In this case do not apply heat until Mowital is wetted to avoid agglomeration. For preparation of a solution with mixed solvents first add Mowital to the solvent which does not dissolve Mowital alone (e.g. aromatic solvent) in order to form a slurry. Then add the alcoholic solvent which normally dissolves Mowital best.

The final solution viscosity as well as the speed of dissolution depend on the type(s) of solvent(s) used, the temperature and the speed of stirring.

## Precautions

Static electricity has to be avoided applying the appropriate safety measures while handling Mowital as well as organic solvents.

## Oxidation stabilization

All Mowital SB grades are free of oxidation stabilizers.

## Food contact status

The use of Mowital is sanctioned by: The (EG) regulation 1935/2004 and No. 10/2011 - all monomers and starting substances authorized by listing in Annex I.

Council of Europe, Resolution AP 96(5) on surface coatings intended to come into contact with foodstuffs - all monomers and starting substances authorized by listing in appendix 2, list 1. US Food and Drug Administration 21 CFR § 175.105 Adhesives, 21 CFR § 175.300 Resinous and polymeric coatings, 21 CFR § 176.170 Components of paper and paperboard in contact with aqueous and fatty foods.

## Industrial Safety and Environmental Protection

Not classified as a dangerous substance or preparation according to the current criteria of chemical legislation, or of the EU CLP regulation (1272/2008).

The safety data sheet contains further information and is available upon request.

*This information is based on our present state of knowledge and is intended to provide general notes on our products and their uses. It should therefore not be construed as guaranteeing specific properties of the products described or their suitability for a particular application. Any existing industrial property rights must be observed. The quality of our products is subject to our General Conditions of Sale.*

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